REMARKS/ARGUMENTS

Claims 1, 3-19, 21-24, 26-29, 31-39 and 41-49 are pending in the present application. Claims 1, 3-19, 21-24, 26-29, 31-39 and 41-49 have been examined and are rejected. In the above amendments, claims 1, 3, 5, 6, 8-15, 21, 23, 26, 28, 33, 35, 41 and 49 have been amended. Therefore, after entry of the above amendments, claims 1, 3-19, 21-24, 26-29, 31-39 and 41-49 will be pending in this application. Applicant believes that the present application is now in condition for allowance, for which prompt and favorable action is respectfully requested.

Claim Rejections – 35 USC § 112

Claims 1, 8, 10, 13, 15, 21, 23, 26, 41 and 49 stand rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. The rejection states that there is no support in the specification for the recited limitations (i) "wherein each of the plurality of symbol blocks is transmitted at most once to the receiver," (ii) "coded information," and (iii) "a different portion of the coded information." Applicant respectfully disagrees with the assertion in the rejection and respectfully submits that the present application discloses the three limitations listed above. However, in order to expedite the processing of the present application, the claims have been amended to more closely match the terminology used in the specification.

The claims have been amended to recite "coded packet" instead of "coded information". Support for this amendment is given in paragraph [0044], which states "a forward error correction (FEC) encoder 414 then encodes the formatted packet in accordance with a coding scheme or code rate indicated by the selected rate and provides a coded packet." (emphasis added).

The claims have also been amended to recite "a different portion of the coded packet" instead of "a different portion of the coded information." Support for this amendment is given in paragraph [0046], which states:

> "[0046] Referring back to FIG. 4A, a partitioning unit 416 receives and partitions the coded packet into N_8 coded subpackets, where N_8 may be dependent on the selected rate and indicated by a partitioning control from controller 140. The first coded subpacket typically contains all of the systematic bits and zero or more parity

bits. This allows the receiver to recover the data packet with just the first coded subpacket under favorable channel conditions. The other $N_B - 1$ coded subpackets contain the *remaining* first and second parity bits. Each of these $N_B - 1$ coded subpackets typically contains some first parity bits and some second parity bits, with the parity bits being taken across the entire data packet. For example, if $N_B = 8$ and the remaining first and second parity bits are given indices starting with 0, then the second coded subpacket may contain bits 0, 7, 14, ... of the remaining first and second parity bits, the third coded subpacket may contain bits 1, 8, 15, ... of the remaining first and second parity bits, and so on, and the eighth and last coded subpacket may contain bits 6, 13, 20, ... of the remaining first and second parity bits. Improved decoding performance may be achieved by spreading the parity bits across the other $N_B - 1$ coded subpackets." (Emphasis added.)

Paragraph [0046] clearly describes the first coded subpacket including different information than the other $N_B - 1$ subpackets, which contain the remaining parity bits not included in the first subpacket. Paragraph [0046] also clearly describes an example in which the $N_B = 8$ and the second through eight subpackets include different bits among the remaining parity bits in the coded packet. Please note that the N_B subpackets are processed (interleaved and modulated) to obtain N_B data symbol blocks, as described in paragraphs [0047] and [0048].

The claims have also been amended to recite "wherein the plurality of symbol blocks are selected for transmission, one symbol block at a time, until the data packet is recovered correctly by the receiver or all of the plurality of symbol blocks are transmitted, and wherein a next symbol block among the plurality of symbol blocks is selected for transmission if the data packet is decoded in error by the receiver" instead of "wherein each of the plurality of symbol blocks is transmitted at most once to the receiver." Support for this amendment is given in paragraph [0038], which states "the transmitter transmits one data symbol block at a time ... until all N_B data symbol blocks are transmitted or an ACK is received from the receiver for the data packet." Support for this amendment is also given in paragraph [0047],

which states "multiplexer 424 provides the *next* interleaved subpacket if a NAK is received for the data packet."

Accordingly, the §112, first paragraph rejection of claims 1, 8, 10, 13, 15, 21, 23, 26, 41 and 49 should be withdrawn.

Claim Rejections – 35 USC § 103

Claims 1, 3, 5-14 and 41 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Piiranien (US 7,031,419) in view of Applicant Admitted Prior Art (AAPA).

On page 2 of the Office Action, the Patent Office states that "in response to applicant's argument that the references fail to show certain features of the applicant's invention, it is noted that the features upon which applicant relies (i.e., channel coding) are not recited in the rejected claim(s)." Applicant has cited certain parts of the specification to show support for the limitations in the claims in order to address §112 rejection. Applicant has also identified certain parts/features of the claims as not being disclosed by the cited references in order to address §103(a) rejection. Applicant respectfully submits that claimed features (and not features disclosed in the specification) are identified as not being disclosed by the cited references.

Claim 1 of the present application, as amended, recites:

> "A method of performing incremental redundancy (IR) transmission in a wireless multiple-input multiple-output (MIMO) communication system, comprising:
>
> obtaining a selected rate for data transmission on a MIMO channel between a plurality of transmit antennas at a transmitter and a plurality of receive antennas at a receiver, the selected rate indicating a particular data rate, or a particular coding scheme, or a particular code rate, or a particular modulation scheme, or a particular data packet size, or a combination thereof;
>
> encoding a data packet in accordance with the selected rate to obtain a coded packet;
>
> processing the coded packet to obtain a plurality of symbol blocks, each symbol block being generated based on a different portion of the coded packet; and
>
> transmitting at least one of the plurality of symbol blocks from the plurality of transmit antennas at the transmitter to the plurality of receive antennas at the

receiver, wherein the plurality of symbol blocks are selected for transmission, one symbol block at a time, until the data packet is recovered correctly by the receiver or all of the plurality of symbol blocks are transmitted, and wherein a next symbol block among the plurality of symbol blocks is selected for transmission if the data packet is decoded in error by the receiver."

Applicant respectfully submits that claim 1 is patentable over Piiranien in view of AAPA for at least the following reasons.

First, the combination of Piiranien and AAPA does not disclose "obtaining a selected rate for data transmission on a MIMO channel," and "encoding a data packet in accordance with the selected rate to obtain a coded packet" (emphasis added), as recited in claim 1. The rejection states that Piiranien does not expressly teach obtaining a selected rate for data transmission on a MIMO channel. The rejection then states that paragraph [0006] of AAPA teaches this limitation.

Applicant respectfully submits that there is no teaching or suggestion to combine AAPA and Piiranien in the manner suggested by the rejection. AAPA describes a system in which a data packet is processed based on a selected rate and transmitted in its entirety if there is decoding error. Piiranien describes a system in which symbols to be transmitted are divided into blocks at a transmitter, and the same blocks are retransmitted if there is decoding error. (See column 2, lines 30-29 of Piiranien.) Piiranien does not describe a mechanism for a receiver to estimate channel conditions, select a rate, and send the selected rate to the transmitter. Piiranien only describes the receiver sending a negative acknowledgement to the transmitter. (See column 11, lines 33-34 of Piiranien.) Piiranien relies on retransmission of the same blocks to *automatically change* the effective rate of the symbols being transmitted. For example, the rate may be R after the first transmission of a block and may be R/2 after a retransmission of the same block. More particularly, Piiranien states "data transmission *adapts automatically* to a changing channel. … If the channel is poor, retransmission is used. The coding included in retransmission enables noise immune transmission as the diversity increases compared to the case of a good channel." Because the effective rate can be changed automatically with retransmission, there would be no motivation to select a rate by the receiver and send the selected rate to the transmitter. Hence, Applicant respectfully submits

that there is no teaching or suggestion to combine AAPA with Piiranien, as indicated by the rejection.

On page 9 of the Office Action, the Patent Office states that it would have been obvious to use the AAPA teachings in the data transmission and reception system of Piiranien because "both Piiranien and AAPA deal with the same problem of retransmission of symbol block when the received block is in error. In addition, both inventions use IR." Applicant respectfully disagrees with the above assertion by the Patent Office. Piiranien describes retransmitting the same set of symbol blocks in a predetermined format when the set of symbol blocks is received in error by a receiver. The predetermined format allows the receiver to perform space-time block decoding of the transmitted set of symbol blocks and the retransmitted set of symbol blocks. In contrast, AAPA describes retransmitting "each data packet decoded in error by the receiver, in its entirety, upon receiving a NAK from the receiver for the packet." Piiranien and AAPA thus describe different retransmission schemes. Furthermore, AAPA does not disclose IR, as stated by the Patent Office.

Second, the combination of Piiranien and AAPA does not disclose "each symbol block being generated based on a different portion of the coded packet" (emphasis added), as recited in claim 1. The rejection states that Piiranien does not teach this feature of claim 1 on page 7, lines 4-5 of the Office Action. The rejection also does not indicate that this feature is disclosed by AAPA.

Third, the combination of Piiranien and AAPA does not disclose "wherein the plurality of symbol blocks are selected for transmission, one symbol block at a time, until the data packet is recovered correctly by the receiver or all of the plurality of symbol blocks are transmitted, and wherein a *next symbol block* among the plurality of symbol blocks is selected for transmission if the data packet is decoded in error by the receiver" (emphasis added), as recited in claim 1. The rejection indicates that Piiranien describes this feature of claim 1 in the Abstract. The Abstract of Piiranien states "dividing the symbols to be transmitted into blocks, the number of which is divisible by the number of transmitting antennas; transmitting one block using each antenna; … and, if the reception of the blocks failed, … retransmitting the *same blocks* in a predetermined format" (emphasis added). Hence, in Piiranien, the same blocks are retransmitted when they are decoded in error by the receiver. Applicant respectfully submits that the Abstract of Piiranien clearly does not

disclose transmitting the next symbol block if the data packet is decoded in error, contrary to the assertion by the rejection.

On page 4 of the Office Action, the Patent Office suggests that Piiranien discloses the feature "each symbol block being generated based on a different portion of the coded packet." The Patent Office states "Piiranien describes an incremental redundancy convention coding and encoded bits are divided into blocks, each block has a portion of the encoded bits, and at the beginning, the first transceiver transmits only the first block … to the transceiver. The first block includes the bits for finding out the content of the whole packet in decoding if the signal-to-noise ratio is good enough (see column 7, lines 45-55)." This section of Piiranien is described in further detail in FIG. 4 and column 8, lines 1-37. Piiranien states "if the reception failed, … the *same* nT bursts are multiplied by the matrices A_1 and B_1 according to formula (1). The groups are transmitted in step 422." (See column 8, lines 21-26.) Piiranien further states "if the reception failed, … the *same* bursts are transmitted again according to step 404." (See column 8, lines 34-37.) Hence, Piiranien clearly describe generating blocks containing the same portion of the coded packet or, equivalently, retransmitting the same blocks upon reception failure.

For at least the above reasons, Applicant respectfully submits that claim 1 is patentable over Piiranien in view of AAPA. Claims 3 and 5-9 are dependent on claim 1 and are patentable for at least the reasons noted above for claim 1. These dependent claims may recite additional features not disclosed nor suggested by Piiranien and AAPA.

Independent claims 10, 13 and 41 each recites the features of claim 1 noted above. Claims 11 and 12 are dependent on claim 10, and claim 14 is dependent on claim 13. Claims 10-14 and 41 are patentable over the combination of Piiranien and AAPA for at least the reasons noted above for claim 1.

Accordingly, the §103(a) rejection of claims 1, 3, 5-14, and 41 should be withdrawn.

Claim Rejections – 35 USC § 103

Claims 15-19, 22-24, 26-29, 31-39 and 49 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Tarokh (US 2004/0057530) in view of Piiranien (US 7,031,419).

Claim 15 of the present application, as amended, recites:

"A method of receiving an incremental redundancy (IR) transmission in a wireless multiple-input multiple-output (MIMO) communication system, comprising:

obtaining a block of detected symbols for a data packet, wherein the detected symbol block is an estimate of a data symbol block transmitted from a plurality of transmit antennas at a transmitter and received by a plurality of receive antennas at a receiver, wherein the data symbol block is one of a plurality of data symbol blocks generated for the data packet by encoding the data packet to obtain a coded packet, each data symbol block being generated based on a different portion of the coded packet, wherein the plurality of data symbol blocks are selected for transmission, one data symbol block at a time, until all of the plurality of data symbol blocks are transmitted or the data packet is recovered correctly by the receiver, and wherein a next data symbol block among the plurality of data symbol blocks is selected for transmission if the data packet is decoded in error by the receiver;

decoding all detected symbol blocks obtained for the data packet to provide a decoded packet;

determining whether the decoded packet is correct or in error; and

repeating the obtaining, decoding, and determining for another one of the plurality of data symbol blocks if the decoded packet is in error."

Applicant respectfully submits that claim 15 is patentable over Tarokh in view of Piiranien for at least the following reasons.

First, the combination of Tarokh and Piiranien does not disclose "obtaining a block of detected symbols for a data packet, … wherein the data symbol block is one of a plurality of data symbol blocks generated for the data packet by encoding the data packet to obtain a coded packet, each data symbol block being generated based on a different portion of the coded packet" (emphasis added), as recited in claim 15. The rejection states that Tarokh does not describe this feature of claim 15 on page 14, lines 1-2 of the Office Action. The rejection also states that Piiranien does not describe this feature of claim 15 on page 7, lines 4-5 of the Office Action.

Second, the combination of Tarokh and Piiranien does not disclose "wherein the plurality of data symbol blocks are selected for transmission, one data symbol block at a time, until all of the plurality of data symbol blocks are transmitted or the data packet is recovered correctly by the receiver, and wherein a next data symbol block among the plurality of data

symbol blocks is selected for transmission if the data packet is decoded in error by the receiver" (emphasis added), as recited in claim 15. Tarokh describes the use of space-time coding (STC), which is the same as the space-time block coding (STBC) described by Piiranien. Hence, Tarokh describes a transmitter retransmitting the *same blocks* if they are received in error. This is clearly shown in FIGS. 6 through 13 of Tarokh, with each figure showing blocks S1 and S2 (shown next to the two antennas 28) being received in error and the *same blocks* S1 and S2 (shown with hashing) being retransmitted later. Applicant respectfully requests the Patent Office to identify the specific section of Tarokh or Piiranien describing this feature of claim 15.

Third, Tarokh arguably teaches away from "the plurality of data symbol blocks (each being generated based on a different portion of the coded packet) are selected for transmission, one data symbol block at a time." Paragraph [0024] of Tarokh states:

> "However, for transmission using multiple antennas, incremental redundancy schemes are not known. This is partially due to the fact that in a space-time channel, signals transmitted from different antennas superpose, and this makes it *difficult to improve the transmitted signals with increasing redundancy*. In this light, there is a need for a way to construct space-time codes to facilitate incremental redundancy in a spatially diverse communication environment."

Paragraph [0024] of Tarokh indicates that it is difficult to improve the transmitted signals with increasing redundancy. The "redundancy" referred to by Tarokh is likely different portions of a coded packet. Instead, Tarokh teaches sending the same symbols using space-time codes to improve performance. Tarokh thus arguably teaches away from transmitting a different portion of the coded packet, one at a time, to improve performance.

On page 5 of the Office Action, the Patent Office disagrees with Applicant's assertion that Tarokh teaches away from redundancy information. The Patent Office states that Tarokh teaches "incremental redundancy with space-time codes". However, this incremental redundancy with space-time codes means retransmitting the same blocks again when they are decoded in error, and not transmitting a next data symbol block generated based on a different portion of a coded packet when the data packet is received in error.

For at least the above reasons, Applicant respectfully submits that claim 15 is patentable over Tarokh in view of Piiranien. Claims 16-19 are dependent on claim 15 and are patentable for at least the reasons noted above for claim 15. These dependent claims may recite additional features not disclosed nor suggested by Tarokh and Piiranien.

Independent claims 23, 26 and 49 each recites the features of claim 15 noted above. Claim 22 is dependent on claim 21, claim 24 is dependent on claim 23, and claim 27 is dependent on claim 26. Claims 22-24, 26, 27 and 49 are patentable over Tarokh in view of Piiranien for at least the reasons noted above for claim 15.

Claim 28 of the present application, as amended, recites:

"A method of receiving an incremental redundancy (IR) transmission in a wireless multiple-input multiple-output (MIMO) communication system, comprising:

receiving a block of received symbols for a data packet, wherein the received symbol block is for a data symbol block transmitted from a plurality of transmit antennas at a transmitter and received by a plurality of receive antennas at a receiver, wherein the data symbol block is one of a plurality of data symbol blocks generated for the data packet by encoding the data packet to obtain a coded packet, each data symbol block being generated based on a different portion of the coded packet, wherein the plurality of data symbol blocks are selected for transmission, one data symbol block at a time, until all of the plurality of data symbol blocks are transmitted or the data packet is recovered correctly by the receiver, and wherein a next data symbol block among the plurality of data symbol blocks is selected for transmission if the data packet is decoded in error by the receiver;

detecting all received symbol blocks received for the data packet to obtain detected symbol blocks, one detected symbol block for each received symbol block;

decoding the detected symbol blocks for the data packet to obtain decoder feedback information;

performing the detecting and decoding for a plurality of iterations, wherein the decoder feedback information from the decoding for a current iteration is used by the detecting for a subsequent iteration; and

generating a decoded packet based on an output from the decoding for a last iteration among the plurality of iterations."

Applicant respectfully submits that claim 28 is patentable over Tarokh in view of Piiranien for at least the following reasons.

First, the combination of Tarokh and Piiranien does not disclose "receiving a block of received symbols for a data packet, … wherein the data symbol block is one of a plurality of data symbol blocks generated for the data packet by encoding the data packet to obtain a coded packet, each data symbol block being generated based on a different portion of the coded packet" (emphasis added), as recited in claim 28 and discussed above for claim 15.

Second, the combination of Tarokh and Piiranien does not disclose "wherein the plurality of data symbol blocks are selected for transmission, one data symbol block at a time, until all of the plurality of data symbol blocks are transmitted or the data packet is recovered correctly by the receiver, and wherein a next data symbol block among the plurality of data symbol blocks is selected for transmission if the data packet is decoded in error by the receiver" (emphasis added), as recited in claim 28 and also discussed above for claim 15.

Third, the combination of Tarokh and Piiranien does not disclose "performing the detecting and decoding for a plurality of iterations, wherein the decoder feedback information from the decoding for a current iteration is used by the detecting for a subsequent iteration" (emphasis added), as recited in claim 28. This feature of claim 28 is clearly shown in FIG. 9A of the present application, which shows decoder feedback information from FEC decoder 950 being provided to channel interleaver 970 and further to detector 920. The rejection indicates that this feature of claim 28 is disclosed by Tarokh in paragraph [0083]. This paragraph states "other, more sophisticated algorithms, such as iterative MMSE and MLD, can be used to further improve the system performance." Tarokh mentions "iterative" only once and does not describe how iterative detection and decoding can be performed. The mere mention of "iterative MMSE and MLD" by Tarokh is non-enabling. Applicant respectfully requests the Patent Office to identify the specific section of Tarokh describing the use of decoder feedback information for a current iteration for detecting in a subsequent iteration, as recited in claim 28.

For at least the above reasons, Applicant respectfully submits that claim 28 is patentable over Tarokh in view of Piiranien. Claims 29, 31 and 32 are dependent on claim 28 and are patentable over Tarokh in view of Piiranien for at least the reasons noted for claim 28. These dependent claims may recite additional features not disclosed nor suggested by Tarokh nor Piiranien.

Independent claims 33 and 35 each recites the features of claim 28 noted above. Claim 34 is dependent on claim 33, and claim 36 is dependent on claim 35. Claims 33-36 are patentable over Tarokh in view of Piiranien for at least the reasons noted above for claim 28.

Claim 37 of the present application recites:

> "A method of receiving a data transmission in a wireless multiple-input multiple-output (MIMO) communication system, comprising:
>
> detecting received symbols for a data packet to obtain detected symbols;
>
> decoding the detected symbols to obtain decoder feedback information;
>
> performing the detecting and decoding for a plurality of iterations, wherein the decoder feedback information from the decoding for a current iteration is used by the detecting for a subsequent iteration, wherein the detecting is performed based on a minimum mean square error (MMSE) detector for at least one iteration initially, and thereafter based on a maximal ratio combining (MRC) detector or a linear zero-forcing (ZF) detector for remaining ones of the plurality of iterations; and
>
> generating a decoded packet based on an output from the decoding for a last iteration among the plurality of iterations."

Applicant respectfully submits that claim 37 is patentable over Tarokh in view of Piiranien for at least the following reasons.

First, the combination of Tarokh and Piiranien does not disclose "performing the detecting and decoding for a plurality of iterations, wherein the decoder feedback information from the decoding for a current iteration is used by the detecting for a subsequent iteration" (emphasis added), as recited in claim 37. The Patent Office indicates that this feature of claim 37 is disclosed by Tarokh in paragraph [0083]. As discussed above for claim 28, Tarokh does not describe iterative MMSE and MLD in any detail, thereby making it non-enabling. Applicant respectfully requests the Patent Office to identify the specific section of Tarokh describing the use of decoder feedback information for a current iteration for detecting in a subsequent iteration, as recited in claim 37.

Second, the combination of Tarokh and Piiranien does not disclose "wherein the detecting is performed based on a minimum mean square error (MMSE) detector for at least one iteration initially, and thereafter based on a maximal ratio combining (MRC) detector or

a linear zero-forcing (ZF) detector for remaining ones of the plurality of iterations" (emphasis added), as recited in claim 37. The Patent Office indicates that this feature of claim 37 is disclosed by Tarokh in paragraphs [0080] and [0083]. Paragraph [0080] states "STC decoder 88 will provide space-time block decoding … using available STC decoding techniques, such as zero-forcing, minimum mean square error, *or* MLD." Paragraph [0080] thus suggests using only one of the available STC decoding techniques. Paragraph [0083] states "more sophisticated algorithms, such as iterative MMSE and MLD, can be used." The cited paragraphs of Tarokh do not disclose using one algorithm for at least one iteration initially and thereafter using another algorithm for the remaining iterations, as recited in claim 37. Applicant respectfully requests the Patent Office to identify the specific section of Tarokh describing the use of one STC decoding technique initially and then switching to another STC decoding technique.

For at least the above reasons, Applicant respectfully submits that claim 37 is patentable over Tarokh in view of Piiranien. Claim 38 is dependent on claim 37 and is patentable for at least the reasons noted above for claim 37.

Accordingly, the §103(a) rejection of claims 15-19, 22-24, 26-29, 31-39 and 49 should be withdrawn.

Claim Rejections – 35 USC § 103

Claim 21 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Tarokh in view of Alouini (US 6,304,593).

Claim 21 of the present application, as amended, recites:

> "A method of receiving an incremental redundancy (IR) transmission in a wireless multiple-input multiple-output (MIMO) communication system, comprising:
>
> determining a rate for data transmission based on an average spectral efficiency for a plurality of transmit antennas at a transmitter, the rate indicating a particular data rate, or a particular coding scheme, or a particular code rate, or a particular modulation scheme, or a particular data packet size, or a combination thereof;
>
> obtaining a block of detected symbols for a data packet, wherein the detected symbol block is an estimate of a data symbol block transmitted from the plurality of transmit antennas at the transmitter and received by a plurality of receive antennas at

a receiver, wherein the data symbol block is one of a plurality of data symbol blocks generated for the data packet by encoding the data packet based on the rate to obtain a coded packet, each data symbol block being generated based on a different portion of the coded packet, wherein the plurality of data symbol blocks are selected for transmission, one data symbol block at a time, until all of the plurality of data symbol blocks are transmitted or the data packet is recovered correctly by the receiver, and wherein a next data symbol block among the plurality of data symbol blocks is selected for transmission if the data packet is decoded in error by the receiver;

decoding all detected symbol blocks obtained for the data packet to provide a decoded packet;

determining whether the decoded packet is correct or in error; and

repeating the obtaining, decoding, and determining for another one of the plurality of data symbol blocks if the decoded packet is in error."

Applicant respectfully submits that claim 21 is patentable over Tarokh in view of Alouini for at least the following reasons.

First, the combination of Tarokh and Alouini does not disclose "obtaining a block of detected symbols for a data packet, … wherein the data symbol block is one of a plurality of data symbol blocks generated for the data packet by encoding the data packet based on the rate to obtain a coded packet, each data symbol block being generated based on a different portion of the coded packet" (emphasis added), as recited in claim 21. Tarokh does not describe this feature of claim 21, as discussed above for claim 1.

Second, the combination of Tarokh and Alouini does not disclose "wherein the plurality of data symbol blocks are selected for transmission, one data symbol block at a time, until all of the plurality of data symbol blocks are transmitted or the data packet is recovered correctly by the receiver, and wherein a next data symbol block among the plurality of data symbol blocks is selected for transmission if the data packet is decoded in error by the receiver" (emphasis added), as recited in claim 21. Rather, Tarokh describes retransmission of the *same* blocks that are received in error, as discussed above for claim 15.

For at least the above reasons, Applicant respectfully submits that claim 21 is patentable over Tarokh in view of Alouini.

Accordingly, the §103(a) rejection of claim 21 should be withdrawn.

Claim Rejections – 35 USC § 103

Claim 4 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Piiranien (US 7,031,419) in view of Applicant Admitted Prior Art (AAPA) and further in view of Tarokh (US2004/0057530). Claim 4 is dependent on claim 1. The combination of Piiranien and AAPA does not disclose all of the elements of base claim 1, as discussed above. Hence, the combination of Piiranien and AAPA is an insufficient basis for the §103(a) rejection of dependent claim 4. Tarokh does not address the deficiencies of Piiranien and AAPA.

Claims 42-48 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Tarokh in view of Haustein *et al* (US 7,366,520). Claims 42-48 are dependent on claims 15, 23, 26, 28, 33, 35 and 37, respectively. Tarokh does not disclose all of the elements of base claims 15, 23, 26, 28, 33, 35 and 37, as discussed above. Hence, Tarokh is an insufficient basis for the §103(a) rejection of dependent claims 42-48. Haustein does not address the deficiencies of Tarokh.

Accordingly, the §103(a) rejection of claims 4 and 42-48 should be withdrawn.

CONCLUSION

In light of the amendments contained herein, Applicant submits that the application is in condition for allowance, for which early action is requested.

Please charge any fees or credit any overpayments that may be due with this response to Deposit Account No. 17-0026.

Respectfully submitted,

Dated: March 16, 2011

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